

1           2. (Previously Amended) The apparatus of claim 1 wherein said stainless steel  
2 alloy has at least 15% chromium.

1           3. (Previously Amended) The apparatus of claim 1 wherein said stainless steel  
2 has alloy has less than 1% nickel.

1           4. (Previously Amended) The apparatus of claim 1 wherein said stainless steel  
2 alloy is selected from the group consisting of stainless steel alloy 430, stainless steel alloy 440,  
3 and stainless steel alloy 446.

1           5. (Unchanged) The apparatus of claim 1 wherein said phosphorous precursor  
2 compound is TEPO, TMP or TEP.

1           6. (Unchanged) The apparatus of claim 1 wherein said phosphorous precursor  
2 is TMP.

1           7. (Unchanged) The apparatus of claim 1 wherein said phosphorous precursor  
2 compound is TEP.

1           8. (Previously Amended) An apparatus for delivering a liquid phosphorous  
2 precursor compound, comprising:

3           a container adapted to hold said liquid phosphorous precursor compound;  
4           a conduit configured to convey said liquid phosphorous precursor compound or  
5           a gaseous product of said liquid phosphorous precursor compound from the container;

6           a heating surface coupled to at least one of a portion of said container and a  
7           portion of said conduit;

8           wherein at least one of said portion of said container and said portion of said  
9           conduit is composed of a stainless steel alloy having less than 5 percent nickel.

1           9. (Previously Amended) The apparatus of claim 8 wherein said stainless steel  
2 alloy comprises at least 15% chromium.

1           10. (Previously Amended) The apparatus of claim 8 wherein said stainless  
2           steel alloy comprises less than 1% nickel.

1           11. (Previously Amended) The apparatus of claim 8 wherein said stainless  
2           steel alloy is selected from the group consisting of stainless steel alloy 430, stainless steel  
3           alloy 440, and stainless steel alloy 446.

1           12. (Unchanged) The apparatus of claim 8 further comprising a heater for  
2           heating said heating surface to a temperature of 160-170 degrees Celsius.

1           13. (Unchanged) The apparatus of claim 8 wherein said apparatus is a bubbler  
2           system for delivering gases to a chemical reaction chamber for semiconductor wafers.

1           14. (Unchanged) The apparatus of claim 8 wherein said apparatus is a boiler  
2           system for delivering gases to a chemical reaction chamber for semiconductor wafers.

1           15. (Previously Amended) The apparatus of claim 8 wherein said apparatus  
2           comprises an injection system for delivering gases to a chemical reaction chamber for  
3           semiconductor wafer fabrication, and wherein said injection system includes an injection  
4           valve composed of a stainless steel alloy having less than 5 percent nickel.

1           16. (Previously Amended) The apparatus of claim 8 wherein said portion  
2           composed of the stainless steel alloy comprises a gasket and a seal.

1           17. (Unchanged) The apparatus of claim 8 wherein said phosphorous precursor  
2           compound is TEPO, TMP or TEP.

1           18. (Unchanged) The apparatus of claim 8 wherein said phosphorous precursor  
2           is TMP.

1           19. (Unchanged) The apparatus of claim 8 wherein said phosphorous precursor  
2           compound is TEP.

1           20. (Previously Amended) A liquid flow injection valve for supplying TEPO,  
2        TMP or TEP to a chemical vapor deposition (CVD) chamber comprising:  
3               an injection orifice for connecting to a source of liquid TEPO, TMP or TEP;  
4        and  
5               a valve outlet for delivering a gaseous mixture generated from said liquid  
6        TEPO, TMP or TEP to said CVD chamber;  
7               said injection orifice including a stainless steel alloy having less than 5%  
8        nickel.

1           21. (Previously Amended) The valve of claim 20 wherein said stainless steel  
2        alloy has at least 15% chromium.

1           22. (Previously Amended) The valve of claim 20 wherein said stainless steel  
2        alloy is selected from the group consisting of stainless steel alloy 430, stainless steel alloy  
3        440, and stainless steel alloy 446.

1           23. (Unchanged) The valve of claim 20 further comprising a heater for heating  
2        said valve to a temperature of 160-170 degrees Celsius.

1           24. (Unchanged) The valve of claim 20 further comprising a plug in said valve  
2        composed of a polyamide.

1           25. (Unchanged) The valve of claim 24 wherein said polyamide is Vespel.

1           26. (Unchanged) A liquid injection system for a CVD chamber comprising:  
2               a container for holding liquid TEPO, TMP or TEP;  
3               an injection valve for converting said liquid TEPO, TMP or TEP into  
4        gaseous form, said injection valve having portions in contact with said liquid TEPO, TMP or  
5        TEP composed of a stainless steel alloy having less than 5% nickel and at least 15%  
6        chromium;  
7               a liquid TEPO, TMP or TEP injection line coupling said container to  
8        said injection valve;

9                   a carrier gas source line coupled to said injection valve; and  
10                  an outlet line coupling said injection valve to said CVD chamber.

1                 27. (Unchanged) The system of claim 26 wherein said stainless steel alloy is  
2                 one of stainless steel alloys 430, 440 and 446.

1                 28. (Unchanged) A method for injecting gaseous phosphorous precursor  
2                 into a chemical vapor deposition chamber, the method comprising:

3                   providing a liquid TEPO, TMP or TEP through an injection valve including a  
4                 stainless steel alloy having less than 10% nickel;

5                   providing a carrier gas through said valve;

6                   creating a pressure differential in said valve; and

7                   heating said injection valve.

1                 29. (Unchanged) The method of claim 28 further comprising the step of heating  
2                 said valve to a temperature of 160-170 degrees Celsius.

1                 30. (Unchanged) The method of claim 29 wherein said valve is heated to  
2                 approximately 165 degrees Celsius.

1                 31-45. PREVIOUSLY CANCELED

1                 46. An apparatus for use with a liquid phosphorous precursor compound, the  
2                 apparatus comprising:

3                   a container adapted to [hld] hold the liquid phosphorous precursor compound;

4                   a conduit; and

5                   an orifice disposed between the liquid container and the conduit, wherein at  
6                 least one of the liquid container, the orifice, and the conduit has a surface of a stainless steel  
7                 alloy having less than 10 % nickel.

REMARKS

B12 6/15  
Claim 46 has been amended; and claims 1-30 remain unchanged. Thus, claims  
1-30 and 46 are pending.